

Research Summary

Student perceptions of the value of the International Baccalaureate extended essay in preparing for university studies

Based on a research report prepared for the IB by:

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Background

The overall aim of this project was to explore the learning benefits and outcomes attributable to the International Baccalaureate (IB) Diploma Programme's (DP) extended essay (EE) in terms of knowledge, skills, abilities, engagement, and other aspects that might prepare students for university studies.

The IB Diploma Programme is designed as an academically challenging and balanced programme of education with externally marked final examinations that prepares 16–18 year old students for success at university and life beyond. The programme is normally taught over two years and has gained recognition and respect from the world's leading universities. The mission of the IB is to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. Currently, the IB works with over 3,500 schools in more than 140 countries to offer IB programmes to approximately one million students. Besides the DP, the IB offers three other programmes to students: the Primary Years Programme (PYP), the Middle Years Programme (MYP) and the IB Career-related Certificate (IBCC). The EE, required for all DP students, asks students to engage in independent, in-depth research on a topic relating to one of the six DP areas of study.

Engagement of students in research and the development of the requisite skills for carrying out that research effectively is a key focus of the EE. This engagement in research is seen as an intrinsically beneficial educational activity that is worthwhile regardless of the educational destinations of the students, but is also viewed as preparation for research activity during undergraduate study (Inkelas, Swan, Pretlow, and Jones 2013). According to published IB material (IBO 2007), the assessment objectives for the EE specify that:

In working on the extended essay, students are expected to:

1. plan and pursue a research project with intellectual initiative and insight
2. formulate a precise research question
3. gather and interpret material from sources appropriate to the research question
4. structure a reasoned argument in response to the research question on the basis of the material gathered
5. present their extended essay in a format appropriate to the subject, acknowledging sources in one of the established academic ways
6. use the terminology and language appropriate to the subject with skill and understanding
7. apply analytical and evaluative skills appropriate to the subject, with an understanding of the implications and the context of their research.

Study design

This research project focused on the following research questions.

1. How well are the documented curricular aims of the EE achieved and sustained as students continue through university studies?
2. To what extent do students perceive the EE experience to be valuable to university preparation and in what ways?
3. What is student self-report of the effort they exerted into their work on the EE?
4. To what degree do students who have experienced the EE meet university expectations for research-related undergraduate work?

To answer these questions this project focused on qualitative methods of data collection to explore and analyse the perceptions of the students currently studying in research-led universities, and their feelings about the EE and the way(s) it matched with, and prepared them for, university study. Student perceptions can be an extremely interesting marker of the success of this experience. Because of the qualitative nature of the project, the focus was on a fairly small number of university students, and data was collected in a relatively intensive manner. The results of the project must, therefore, be interpreted as indicative rather than definitive, and are not necessarily generalizable to all former IB Diploma Programme students.

The research was undertaken at two universities in the Midlands, UK. Both these universities were chosen as institutions that particularly valued research, and where, therefore, the research skills hopefully engendered in students through the EE experience might most usefully be applied in the course of undergraduate study. Former DP students at the two universities were invited to participate. Additionally, a comparative group was also invited to participate, consisting of students who had come to university after studying A-levels (General Certificate of Education Advanced Level) in schools in England or Wales.

The sample comprised a total of 43 students. Of these students, 24 had come to university via the DP. These 24 former IB students were asked to suggest a friend who had done A-levels. These friends were contacted, and 19 agreed to take part in the study as a comparison group. The sample was not stratified in any way. A large majority of the participating students (35) were in their first year of undergraduate study, and 8 were in their second year. The total group of 43 students were studying across a range of 14 subject areas; these included arts-humanities, social sciences, and STEM (science, technology, engineering and mathematics). Each student was also asked to nominate a university tutor that they thought would know their work best. They nominated 19 different tutors, 14 of whom agreed to take part in the study (relating to 33 students).

The initial data gathering was done through a series of semi-structured interviews with individual students and tutors. During the interviews, students were asked about their recollections of the EE, what they had learned, found most interesting, useful, and disappointing, and how the experience has affected their university studies. Tutors were asked about students' prior experiences, preparation and how the university subjects were designed to draw upon the students' previous experiences.

Following these individual interviews, 4 (2 in each university) focus groups were held with 18 members of the DP group in order to help stimulate further descriptions by the students. During these meetings, groups were asked to describe their recollections of their EE work. It was anticipated that the groups would require some prompting with more direct questions about their experiences, but in fact lively conversations ensued in all groups.

Analysis

The individual and focus group interviews were transcribed and then imported into NVivo software for analysis. The 4 major sets of data were as follows (sets 1, 2 and 3 were entered into NVivo):

1. 24 individual interviews from the former IB Diploma Programme students
2. 19 individual interviews from the former A-level students
3. 4 focus group interviews from the former IB Diploma Programme students
4. 14 individual interviews from university tutors

Open coding was carried out on the transcripts of the 24 individual interviews and the 4 focus group meetings with the former DP students using a constant comparative approach (Strauss and Corbin 1998), in which data and its categorization was constantly compared to what had gone before. By the conclusion of this process, 41 codes had been developed during the analysis. No additional codes were developed during the analysis of the focus group transcripts.

Next, the 19 individual interviews with the group of students who had studied A-levels were analysed using the open coding approach. These were students with a different educational history to the former DP students and, as expected, their responses during the interviews led to new codes (17). A completely separate analysis was carried out on their interview data, with comparison between themes only being done at the conclusion of the analysis of each group. It should be noted that the codes and categories derived from this A-level group were in response to quite different interview stimuli. Thus the meanings of the questions were actually quite different for each group, even though the words may have been similar.

The next step in the analysis was to look for links between the codes employed during the initial analyses. The next round of coding was axial coding (Strauss and Corbin 1998), attempting to interrelate the codes already developed into hierarchically arranged trees, or categories (Gurdial Singh and Jones 2007). The categories derived from the former DP students were compared to those derived from the former A-level students and meta-categories, labelled as “outcome themes”, were developed.

Table 1

Relating outcome categories to themes		
Outcome themes	Categories derived from former Diploma Programme students	Categories derived from former A-level students
1. Overall reactions to the EE and A-level experience	1. Pride in their achievement in completing the EE 2. Enjoyment of the process of undertaking the EE	1. Enjoyment or lack of enjoyment of the process of completing A-levels
2. Learning from the EE and A-level experience	3. The freedom to select their own topic and to pursue it 4. Their development of study skills and “study awareness”	2. The focus of A-levels on the learning of facts 3. The lack of attention to study skills during the A-level programme
3. Criticisms of the EE and A-level experience	5. Difficulties in designing, carrying out and reporting research 6. Support from teachers in understanding and carrying out research	4. Support from and relationships with their teachers
4. The impact of the EE and A-level experience on undergraduate study	7. Lack of linkage with their university study programme 8. Involvement in research while at university	5. Preparation for their university study programme

Student interview outcome themes

Overall reactions

The predominant theme to emerge from the interviews was that all the students who had completed an EE were very positive about their experience. They were also very positive about what they produced during this activity.

“This was probably the only time in school when I decided for myself what I wanted to learn about.”

“I was really proud of what I did in that project. Got a good mark too!”

It was noticeable that those students who had followed the more traditional A-levels were much less positive about their school experiences, and seemed especially sensitive to the feeling that the learning of facts had been predominant in their school experiences. We must recognize, however, that if A-levels had a similar independent project component a more direct comparison would have been possible.

Learning

The former IB Diploma Programme students were clear that they had learned from their EE experience. This learning concerned not only the content of the material, but also aspects of study skills and what might be called “study awareness”.

“I think I ended up learning some things my teacher didn’t know.”

The former A-level students had more mixed feelings about their learning. A commonly expressed idea among this group was that their A-level study had made them learn plenty of facts, but had not really helped them develop their skills of studying.

Criticism

Criticism mostly focused on the support students were given for their EE work while at school. All claimed to have had some introduction to methods of carrying out research, but for many this was not very memorable. Only 4 members of the group claimed to have had sustained and effective support in designing and carrying out their research.

“I loved doing the research but I never knew if I was doing it properly.”

The impact on undergraduate study

Both the former DP and the former A-level students were less than positive about the ways their pre-university work was used in their university work. Several former DP students expressed some disappointment that, even in research-intensive universities, they had had little chance to use the skills they thought they had developed through their work on the EE. It is important to note that the majority of students in the sample were in their first year of university study.

“They said we would be involved in research but we haven’t been yet.”

Tutor interviews

Of the 14 tutors interviewed, only 1 was aware that the student who had nominated him or her had come to university from an IB background. This being the case, it was not surprising that these tutors felt unable to comment upon the effects of the EE experience on these students' undergraduate progress. However, these tutors all saw their role as "academic pastoral" rather than as monitors of students' academic development, saying that the tutors who actually taught them would be better placed to give this information. This may suggest, however, that to their tutors, former IB Diploma Programme and former A-level students were indistinguishable from each other. Of the 14 tutors interviewed, 12 mentioned the research-led nature of their universities and claimed that undergraduates would need to engage with research. When asked to volunteer any details of how this had happened with the particular students concerned here, none could do this.

Discussion of research questions

How well are the documented curricular aims of the EE achieved and sustained as students continue through university studies?

The findings of this project suggest that most of the aims of the EE had been met. The former DP students expressed that they had enjoyed and valued their EE experience, and that it had taught them a lot, especially in terms of being critical and independent. They were also more positive about their pre-university education than the former A-level students (although given the design of the project, too much should not be read into this). However, they did express some disappointment with the research methods support they had received while at school. This had meant that their engagement in a systematic process of research and their development of research and communication skills varied across schools and teachers. Some had had positive experiences with research support in school, but these were in the minority.

To what extent do students perceive the EE experience to be valuable to university preparation, and in what ways?

The majority of the former IB students in this study indicated there were few opportunities to use the skills they had developed through doing their EE. In particular, they were disappointed that the expectations they had about being involved in research when at university had not been met. The implication of this outcome is that receiving universities perhaps need to be better informed about the pre-university experiences of their incoming students. It should be noted that the majority of the sample were first year university students and therefore they might not have had the opportunity to engage in university research yet.

What is student self-report of the effort they exerted into their work on the EE?

It was clear from the responses of the former DP students that they had enjoyed and valued their EE experience and had, thus, committed themselves to it. This, it might be argued, is likely to have led to a great deal of student effort being devoted to this experience. This study cannot, of course, reveal whether these students would have committed the same amount of effort to other forms of pre-university study.

To what degree do students who have experienced the EE meet university expectations for research-related undergraduate work?

This turned out to be a somewhat problematic research question because it was difficult to determine the universities' expectations for research-related undergraduate work. The students involved in this study were either first or second year undergraduates and none of them indicated involvement in any research-related undergraduate work at the time of this study. None of the tutors interviewed in the study could say whether the pre-university educational experience of the target students had prepared them well for university.

Implications and recommendations

The former DP students were generally very positive about the experience, and this positive feeling extended to the ways they had been supported in their work by their teachers.

"I had a brilliant teacher. She was always there when I needed help. I don't know how I would have managed without her."

The one area in which this support seemed to not have been as good was in the development of student research skills. The student who commented that, "Research is not as easy as it sounds" was making an excellent and heartfelt point. Research is not easy, and carrying out research well demands a high level of knowledge of process and a sophisticated understanding of content. It would likely benefit students undertaking the EE to be introduced to and supported in research methods and procedures to a greater extent. Thus the recommendation arising is that the IB take a lead in developing more extensive research methods training materials, suitable for typical DP students, and capable of being delivered, with local modifications perhaps, by teachers who are not themselves active researchers. While the IB provides guidelines and support materials for the EE supervisor, perhaps these materials could be examined to determine alignment with university research expectations.

Secondly, this research has raised the question of what it means when a university says it is committed to research at all levels. The involvement of undergraduates in research activity as a normal part of their university course is an aspiration for many universities. Yet the reality in this study is that undergraduate students are not routinely involved in research. It could be beneficial for university tutors to be made aware when the undergraduates they work with have completed a substantial research-based assignment prior to entering university. Thus, an enhanced public relations exercise on the part of the IB targeted at the universities who will select and receive DP graduates might be advantageous. The achievement and experience of such graduates is qualitatively different from those of other university entrants. University tutors need to know that, and hopefully this study can be useful in shedding light on the pre-university research experience of IB Diploma Programme students.

References

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This summary was developed by the IB Research Department. A copy of the full report, prepared by the University of Warwick is available at <http://www.ibo.org/research>. For more information on this study or other IB research, please email research@ibo.org.

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